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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,081	12/10/2003	Simon Sabato	72255/00462	7960

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TUCKER ELLIS & WEST LLP
1150 HUNTINGTON BUILDING
925 EUCLID AVENUE
CLEVELAND, OH 44115-1414

EXAMINER	
OVEISSI, DAVID M	
ART UNIT	**PAPER NUMBER**
2416	

NOTIFICATION DATE	DELIVERY MODE
04/28/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@tuckerellis.com
christopher.luoma@tuckerellis.com

Office Action Summary	Application No.	Applicant(s)	
	10/734,081	SABATO ET AL.	
	Examiner	Art Unit	
	DAVID OVEISSI	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-10,12 and 13* is/are rejected.

7)☒ Claim(s) *4-5, 11, and14-18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/20/2009 has been entered.

Claim Objections

2. Note: The phrase "such that" recited in claim 1 line 8; claim 7 lines 8, claim 8 lines 11, and claim 14 lines 8 is not positively recited claim limitations. Therefore, the limitations after the phrase are not considered the claim limitations. It is suggested applicant to remove the phrase.

Claim Rejections – 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alferness et al. (5,555,396) in view of Yin (5,926,458).

For claims 1and 6 Alferness teaches a method for managing a queue of packets using queue set data structures, the method comprising:

transforming a plurality of consecutive packets into a queue set data structure based on a target queue set data structure size, the plurality of consecutive packets being associated with the queue, wherein the plurality of consecutive packets comprises a first packet having a first packet size and a second packet having a second packet size (see abstract “queue collects multiple message segments which is enqueued /de-queued as a single entity, as well as variable message size-the maximum size of a message is expanded”, column 2 lines 1-7 “the message size is variable and if the message size is greater than the queue size, then it segmented into smaller sizes” , column 5 lines 14-19 the maximum size of message is bounded only by the memory space of the system that is available for message processing”, Fig. 3 “entries B1, B2, B3 being consecutive”, column 2 lines 43-47 “multiple entries are dequeued by the same receiving process, column 3 lines 63-67 “queue definition”, column 2 line 37-42 “queuing architecture”); and

performing a queuing operation on the queue set data structure, the queuing operation treating the queue set data structure as a single entity, such that the queuing operation is performed on each of the plurality of consecutive packets in the queue set data structure (see abstract “enqueued /de- queued as a single entity”, column 2 line 42 “a single entity”, column 3 line 29-38 segments (different sizes) of a large message is stored in each queue”, and column 4 line 50 dequeued as a single entity”). Although Alferness implicitly teaches packet or segments have different sizes, Yin from the same

field of endeavor explicitly teaches this obvious limitation (see abstract the queue is calculated in response to the size a packet and bandwidth allocated to the queue", Fig. 4 “DETERMINE SIZE OF THE NEXT DATA PACKET IN THE IDENTIFIED QUEUE”, Fig. 5 “DETERMINE SIZE OF THE NEXT DATA PACKET IN THE IDENTIFIED QUEUE”, column1 45-48 “IP data packets may different sizes(i.e., lengths)", column 1 lines 66-67 “the data packets stored in each queue typically have different packet lengths”, column 2 lines 1-25 “packet size”, lines 65-66 “the data packets stored in each queue typically have different packet lengths”, column 3 line 2 “packet size”, column 3 lines 22-25 “data packet” includes any grouping of one or more data elements of any size, including cells, data bytes”, column 7 line 67 “$R(i)=R_{min}+I(i)XP(i)$”, and column 8 lines 36-37 “a data packet size determiner”). Thus, it would have been obvious to the person of ordinary skill in the art at the time of invention to use the packet size teachings of Yin in the queue system of Alferness. This combination is possible because the incoming packet to a queue as taught by both Alferness and Yin vary in size. The motivation for this combination is to provide an efficient queuing system.

For claim 2 Alferness teaches a method, wherein transforming the plurality of consecutive packets into the queue set data structure further comprises:

determining a size of each of the plurality of consecutive packets:

allocating the plurality of consecutive packets to the queue set data structure based on a target queue set data structure size according to the consecutive packet sizes, the target queue set data structure size being approximate to a largest supported packet

length of the queue (see column 2 lines 48-50 “expand the size of queue entry”, column 4 lines 11-15 number of words of in the Text Area used is dependent on the size of the data being passed in the message. This size is specified by an Upper Limit field”, and column 5 “the size of a queue entry is bounded by the memory system that is available for message processing”).

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alferness et al. (5,555,396) in view of Yin (5,926,458) further in view of Yin (Yin’012: US 6,810,012 B1).

For claim 3 Alferness /Yin teach all the aspect of claim3 with exception of “a queue service interval” a method, further comprising:
determining a queue service interval for performing queuing operations on queue sets data structures based upon a desired data rate and a target queue set data structure size;

wherein performing the queuing operation on the queue set data structure related to the queue further comprises:

performing a first queuing operation on a first queue set data structure related to the queue,

delaying a period of time equivalent to the queue service interval, and performing a subsequent queuing operation on a second queue set structure related to the queue. However, Yin’012 teaches this limitation (see abstract “scheduler uses a

service interval", column 2 lines 60-65 "service interval", column 3 line 43-44 "service interval", column 4 lines 7-10 "the service time T(j) is incremented using the service interval I(j) ", column 4 lines 42-50 "service interval", and column 3 line 67 "service interval", column 5 line 5 "service interval").Thus, it would have been obvious to the person of ordinary skill in the art at time of invention to use the scheduler of Yin'012 in the combine queuing system of Alferness and Yin. The motivation for this combination is to reduce congestion.

5. Claims 8, 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yin (Yin458 5,926,458) in view of Alferness et al. (5,555,396).

For claim 8 Yin teaches a system for queue management using queue sets data structures, comprising:

a queue set data structure generator configured for transforming a plurality of consecutive packets into a queue set data structure based on a target queue set data structure size, the plurality of consecutive packets being associated with a queue, wherein the plurality of consecutive packets comprise a first packet having a first packet size and a second packet having a second packet size, the queue set data structure generator further configured for generating a notification when a queue set data structure is ready for scheduling(see Fig. 2 "buffer controller", "Packet Scheduler" Queue set "46, 48, 50, & 52" see column 4 lines 18-40 "buffer controller serves different functions, buffer pool, and set of queues", abstract queue service time is function of

packet size and allocated bandwidth to the queue", Fig. 4 "90", Fig. 5 "108", column 1 lines 46-48 "IP data packet may have different sizes", column 2 lines 1-25 “packet size”, lines 65-66 “the data packets stored in each queue typically have different packet lengths”, column 3 line 2 “packet size”, column 3 lines 22-25 “data packet” includes any grouping of one or more data elements of any size, including cells, data bytes”, column 7 line 67 “$R(i)=R_{min}+I(i)XP(i)$”, and column 8 lines 36-37 “a data packet size determiner”); and

a scheduler communicatively coupled to the queue set data structure generator to receive the notification, the scheduler configured for performing a queuing operation on the queue set data structure(see Fig.1 “28”, Fig. 2 “28”, Fig. 33 “66”, Fig. 4 “76 & 92” and column 4 lines 11-67 “28”column 6 lines 44-67 “scheduling algorithm”),

Yin does not teach the queuing operation treating the queue set structure as a single entity, such that the queuing operation is performed on each of the plurality of consecutive packets in the queue set data structure. However, Alferness from the same field of invention teaches this limitation (see abstract “queue collects multiple message segments which is enqueued /de- queued as a single entity”, column 2 lines 43-47 “multiple entries are dequeued by the same receiving process”, column 3 lines 63-67 “queue definition”, column 2 line 37-42 “queuing architecture”). Thus, it would have been obvious to the person of ordinary skill in the art at time of invention to use queuing operation of Alferness in the data transfer system of Yin. The motivation for this combination is data transfer efficiency.

For claims 9 and 13 Yin teaches a system, wherein the queue set data structure generator is further configured for:

determining a size of each of the plurality of consecutive packets (column lines 34-37 " packet size determiner"): and

Yin does not teach allocating the plurality of consecutive packets to the queue set data structure based on a target queue set data structure size according to the consecutive packet sizes, the target queue set data structure size being approximate to a largest supported packet length of the queue limitation. However, Alferness from the same field of invention teaches this limitation (see abstract "queue collects multiple message segments which is enqueued /de- queued as a single entity, as well as variable message size-the maximum size of a message is expanded", column 2 lines 1-7 "the message size is variable and if the message size is greater than the queue size, then it segmented into smaller sizes" , column 5 lines 14-19 the maximum size of message is bounded only by the memory space of the system that is available for message processing", Fig. 3 "entries B1, B2, B3 being consecutive", column 2 lines 43-47 "multiple entries are dequeued by the same receiving process, column 3 lines 63-67 "queue definition", column 2 line 37-42 "queuing architecture"). Thus, it would have been obvious to the person of ordinary skill in the art at time of invention to use queuing operation of Alferness in the data transfer system of Yin. The motivation for this combination is data transfer efficiency.

6. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yin (Yin458 5,926,458) in view of Alferness et al. (5,555,396) further in view of Wolrich et al. (US 2003/0140196 A1).

For claims 10 and 12 Yin teaches a system, wherein the scheduler is further configured for determining a queue service interval for performing queuing operations on queue sets data structures based upon a desired data rate and a target queue set data structure size, performing a first queuing operation on a first queue set data structure related to the queue, delaying a period of time equivalent to the queue service interval, and performing a subsequent queuing operation on a second queue set data structure related to the queue (see abstract "queue service time" Fig. 4 "service time", column 2 lines 1-25 "service time" , and column 6 line 32-67 "scheduling algorithm"). Yin does not teach the criteria for calculating service interval. However, Wolrich from the same field of endeavor teaches this limitation (see paragraph 19 "various criteria can be used for service scheduling"). Thus, it would have been obvious to the person of ordinary skill in the art at the time of invention to use the scheduling teaching of Wolrich in the combined system of Yin/Alferness. The motivation for this combination is to minimize the congestion.

Allowable Subject Matter

7. Claims 4-5, 11 and 14-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Waclawsky (US 6,449,255 B1), Aweya et al. (US 7,047,312 B1), and Giroux et al. (US 2002/0044529 A1).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID OVEISSI whose telephone number is (571)270-3127. The examiner can normally be reached on Monday to Friday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2416

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